COVID-19 has laid bare our nation’s connectivity crisis, magnifying the home connectivity disparities (commonly known as the “homework gap”) that impact millions of students across the United States.

When the coronavirus pandemic hit, closing school buildings for 55 million K-12 students, America took an unexpected crash course in remote learning. For students without reliable access to home Internet and devices – primarily students of color and those who come from low-income families – it has been nearly impossible to keep up with their better-connected classmates.

While school leaders have worked tirelessly to deliver online instruction, pre-existing inequities have prevented the most vulnerable students from accessing online instruction, putting them at a significant disadvantage. The homework gap has become an education gap.

We launched Digital Bridge K-12 to meet this challenge head-on. Through our work developing strategies and resources to help school districts and policymakers respond to the immediate crisis, best practices have emerged to inform a much-needed national strategy for closing the digital divide at large.

We have made significant progress. Over 800 school districts have used our playbook to connect with families and understand their home digital access needs. Our work with CCSSO provides a blueprint for state education leaders to facilitate high-quality data collection aggregated at the state and national levels. But it is the collaborations between the public and private sectors that have presented a game-changing opportunity.

The K-12 Bridge to Broadband initiative was inspired by the innovative Chicago Connected program, which brought together philanthropists, city leaders, the school district, and local broadband providers to identify and connect students without service at home. We believe that this new mechanism for engaging Internet Service Providers can provide the data needed to systematically identify students on the wrong side of the K-12 digital divide, develop cost-effective strategies for closing the homework gap, and build the political will to fund solutions at scale. This will be the focus of our future work.

Our goals are clear. School districts and states need a repeatable way to identify students who lack home digital access, Internet Service Providers need to offer affordable solutions for home access tailored to schools and states, and there needs to be federal funding for student home access.

Broadband is one of the most transformative technologies of our generation. We look forward to continuing to advance equal access to opportunity in the United States. We achieved the impossible when we connected every public school classroom to broadband. Now, it is time to ensure we connect every student at home.

With gratitude for all your support on behalf of America’s K-12 students.

Many thanks,

Evan Marwell
Founder and CEO
EducationSuperHighway

“We achieved the impossible when we connected every public school classroom to broadband. Now, it is time to ensure we connect every student at home.”
Before the pandemic, nearly everyone agreed that the homework gap was concerning, but the issue lacked the broad, systemic support needed to solve it. Even as digital learning became more ubiquitous in recent years, related challenges like access to devices and classroom connectivity made incredible progress, while very little was done to address the homework gap.

EducationSuperHighway was no exception: from our founding in 2012 through the winter of 2020, we were singularly focused on our mission to get high-speed Internet access into every K-12 school in the country. Through our work – in partnership with a dedicated coalition of state and school leaders, state and federal policymakers, like-minded nonprofit organizations, and the business community – we were able to increase the number of students with access to high-speed broadband in their schools from four million students in 2013 to nearly 47 million students in 2020.

But when school closures caused by the COVID-19 pandemic forced students in every state to switch to remote learning overnight, home suddenly became school. The consequences of the homework gap in the midst of the pandemic were impossible to ignore: 9.7 million students, disproportionately Black and people of color, didn’t have the Internet access they needed to continue their education at home.

The onset of the pandemic and its impact on school closures coincided with the planned sunsetting of EducationSuperHighway. After completing our mission, we began wrapping up our projects, offboarding our staff, and handing off work to partner organizations. While we weren’t clear at the beginning of the pandemic on the exact role that EducationSuperHighway needed to play, we knew that we couldn’t sit on the sidelines while unconnected students fell further and further behind their better-connected peers. That’s why we launched the Digital Bridge K-12 initiative in April of 2020.

This objective of this report is to summarize the work we’ve done, the lessons we’ve learned, and how our experiences from the past six months can inform a strategy on how to close the K-12 home digital divide and keep it closed permanently, even after the COVID-19 crisis is under control. States and school districts have worked with Internet Service Providers to bring connectivity to an additional three million students during the pandemic, but to sustain and build upon these gains, it will be critical for schools, industry, and government leaders to support a nationwide effort to bridge the digital divide. The conditions for a coalition such as this to emerge are stronger now than they ever have been, and we need to seize this opportunity to permanently close the homework gap and ensure that every student, regardless of zip code, has equal access to educational opportunity.

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1. EducationSuperHighway milestones
2. Some estimates put the number of unconnected students at a much higher number. See Future Ready’s page on the homework gap, and Common Sense Media’s Closing the K-12 Digital Divide in the Age of Distance Learning.
Phase 1: Results and Key Takeaways
At the outset of the Digital Bridge K-12 initiative, the primary objective was to understand the specific challenges that school districts were facing in their efforts to ensure that every student had access to distance learning during the pandemic. We were able to get insight into these challenges by launching pilot programs to deploy super hotspot devices for several school districts in the San Francisco Bay Area in partnership with the Sprint 1Million Project (now part of T-Mobile’s Project 10Million).

Through this work, we determined that school districts were struggling in a handful of key areas:

1. Identifying specifically which students lacked connectivity and a dedicated learning device at home,
2. Understanding what the best options were for connecting students at home and how to procure those connections efficiently,
3. Putting in place a robust device lending program to ensure that every student has a suitable learning device, and
4. Securing funding to provide devices and connectivity for students.

To address the challenges school districts were facing, we set the following objectives for our team to deliver by June 30th:

- Support our pilot school districts to evaluate strategies for assessing needs and deploying solutions,
- Launch a website containing tools, resources, and best practices to guide school districts through the challenges associated with providing home digital access to students,
- Create a playbook for effectively assessing which students lack home connectivity and a dedicated learning device,
- Build a device lending program guide for school districts,
- Develop a theory of change for how states can play a role in helping these strategies and solutions scale, and
- Engage in the federal policy discussion around funding for student digital access.
Phase 1: Results and Key Takeaways

Phase 1 Results

Super Hotspot Pilots

Super hotspots are enterprise-grade mobile routers that project Wi-Fi signals into the immediate surrounding area, reaching up to 30 users within a 50-200 feet range. Our plan was to deploy 50 super hotspot devices across four Bay Area school districts (San Francisco Unified School District, West Contra Costa Unified School District, Stockton Unified School District, and Bayshore Elementary School District), with the majority of devices going to SFUSD.

In San Francisco, education leaders planned to place the super hotspots in population-dense public housing, but we found a number of physical challenges with deploying devices. The devices are best suited to open spaces and not intended to penetrate walls.

West Contra Costa found a better use case in learning hubs, where a small group of students gather for safe remote learning in a community space.

“The superspots have proven to be invaluable for us in providing Wi-Fi to WCCUSD students in our community hubs. At the hubs, our students get support getting online and engaging in distance learning with their teacher and classmates. The 13 superspots make reliable Wi-Fi access and therefore learning possible for these students!”

TRACEY LOGAN, CHIEF TECHNOLOGY OFFICER, WCCUSD

In looking for where to best deploy the super hotspots, we found that most school districts didn’t know where their unconnected students were or what service options were available to them. The mapping tool we developed was born out of the needs we saw on the ground to help school districts use data to plan how to strategically connect students.

Launch of DigitalBridgeK12.org

In May, we launched the Digital Bridge K-12 website. The initial launch contained guides on how to think about the connectivity requirements for different remote learning approaches, articles on creating a comprehensive home connectivity strategy, and expert advice on device lending. Since its inception, the site has grown to over 100 pages of content dedicated to Home Digital Access, including our Home Access Needs Assessment Playbook, detailed advice for state leaders, procurement resources, webinars, and a virtual training hub for school district leaders. Over the past six months, we have experienced high engagement from users in every state, with 80K unique page views from 25K users.

District Toolkits

School districts had little to no experience in providing connectivity services to students at home prior to the pandemic. We created a toolkit of primer articles and best practice case studies to guide school leaders on assessing, procuring, and deploying home access solutions. This included our Remote Learning Device Toolkit, which provides guidance and best practices to help school districts research, procure, deploy, and manage remote learning devices. The comprehensive guide covers every stage of the device loaning cycle, including templates for privacy policies, acceptable use policies, RFPs, and RFQs.

Software Tools

To get their students connected for remote learning, school districts needed to determine which student addresses lacked sufficient connectivity, and what their Internet options were. With our mapping tool, school districts could securely upload student address data and learn about service provider availability, giving them actionable steps to get those households connected. The program also
Phase 1: Results and Key Takeaways

addressed the emergency need to deploy hotspots to neighborhoods. Utilizing a machine learning algorithm combined with the map, school district personnel could model where to place super hotspots to cover a maximum number of students. Over 175 user accounts were created, mapping in excess of 85,000 addresses matched with service providers in their area in easily downloadable format. We also created a service provider lookup tool that highlighted low-cost offerings and offerings tailored to K-12 students’ families. As of October 2020, the lookup tool had received over 6,000 visits.

Case Studies and Best Practices
We developed a series of case studies to share best practices for how states, school districts, service providers, community-based organizations, and the philanthropic community are working together to identify and connect students who lack home digital access.

Budget Calculator
The federal government provided CARES Act funding to states and school districts but left it to state and local officials to determine the specific areas to allocate funding to. EducationSuperHighway developed a budget calculator that provided guidance for policymakers on the amount of funds needed to address K-12 connectivity during the pandemic based on factors including the estimated number of students without access, the mix of wireline and wireless solutions, and the cost of services.

CCSSO Partnership
In July, we launched a partnership with the Council of Chief State School Officers (CCSSO) to create the Home Digital Access Data Collection Blueprint for State Education Leaders. This framework was developed to facilitate high-quality data collection to identify which students need home connectivity.

Establishing a set of common elements for collecting data about student home digital access helped school districts understand which pieces of actionable information they should be gathering, and helped ensure that the data can be aggregated at the state and national levels. This information then enables state education leaders to advocate to both the state and federal government for funding to close the digital divide and direct resources more efficiently.

Home Access Needs Assessment Playbook
We conducted interviews and best practice research with school districts and states to understand their key challenges and created the Home Access Needs Assessment Playbook. The playbook is a step-by-step guide to help school districts identify students who lack a home Internet connection or a dedicated learning device. We then used learnings from the playbook to launch data collection pilots with school districts.
Phase 1: Key Takeaways

Perhaps most importantly, a mindset shift occurred – and quickly – with regard to how schools thought about home Internet access for students. Before the pandemic, it was considered the responsibility of families. Now that school was at home, it became the responsibility of states and school districts.

One of the most critical challenges school districts and states have is assessing student-level needs – something that EducationSuperHighway is well-positioned to help address. Through our pilot programs, we found that survey approaches were not sufficient to gather this data, and that the school districts that were using several different outreach methods – including phone banking, texting, mailers, and physical visits – were getting much better results.

While hotspots were initially considered a good short-term solution by many school districts, they ran into many problems trying to procure and deploy them: supply chain issues, cost, service provider options, and how best to identify students in need and efficiently connect them to those services.

We also saw that school districts needed the guidance and financial support from their state education leaders, and that the key to scaling solutions to solving the gap was to partner with states rather than school districts.

And finally, we saw examples of how school districts and states could successfully partner with Internet service providers to bridge the homework gap by observing the groundbreaking work in North Dakota and Chicago. Replicating these public-private partnerships had the potential to drive significant progress in closing the K-12 home digital divide.
Phase 2: Results and Key Takeaways
2

Phase 2: July through October

Based on our learnings from Phase 1, we felt that our experiences as an organization in using data-driven approaches to help school districts navigate broadband procurement challenges and in partnering with states to deliver solutions at scale meant that we were well-positioned to help schools address the key barriers in closing the K-12 home digital divide during the COVID-19 pandemic.

We set the following October 30th objectives for our initiative:

- Validate and distribute the Digital Bridge K-12 self-service playbook and tools for school districts to identify the addresses of students who don’t have home Internet and dedicated learning device access,
- Provide school districts with a procurement template, service provider options, and a process to procure home connectivity solutions for their unconnected students based on the North Dakota and Chicago models, and
- Achieve adoption of data collection at scale by ensuring 20 states commit to supporting school districts to collect home connectivity and device data at the student level.
Phase 2: Results

Data Collection Pilots and Home Access Needs Assessment Playbook

We executed eight school district pilot projects in three states (Oregon, Wisconsin, and Virginia), supporting the collection of student connectivity data through a variety of methodologies, including direct calling campaigns and texting polls. The school districts then leveraged the data collected to apply for funding and procure solutions to serve the students identified as having insufficient connectivity.

Based on the pilots, we developed a self-service playbook with direct outreach strategies and tools that aligned with the blueprint for state leaders, partnering with experts in family engagement and large-scale outreach as we built out and improved the playbook content.

SIS Vendor Letter with CCSSO

Through our ongoing collaboration with CCSSO, we drafted a letter to the top three Student Information Systems (SIS) vendors (representing over 50% of all school districts in the country). The letter was signed by 21 states, and encouraged the vendors to act with urgency to add a common set of data elements – a crucial part of making student connectivity data collection systemic. These vendors (including PowerSchool, Infinite Campus, and Skyward) have already added the data fields to their collection process – an effort that usually takes many months – and, moving forward, CCSSO will leverage this progress to get the other SIS vendors to follow suit. PowerSchool noted that they had never before seen new data fields added and adopted by states so quickly, and they credited this to the clear definitions of the data elements in the Data Collection Blueprint.

Digital Equity Outreach Month

In September, we launched Digital Equity Outreach Month, a national campaign to encourage school districts to take timely action to identify the students in their district who lack home connectivity.

Over the course of the month, 841 school districts in 41 states participated. We also launched state-specific initiatives in Indiana, Wisconsin, Virginia, Nebraska, and California.

Participating school districts attended webinars to get trained on the playbook, took a pledge to assess connectivity needs, and leveraged our mapping tool to visualize the digital access gap and identify potential connectivity solutions.

“Equity is indeed our driving principle, and we’re not going to be satisfied until we have 100% of students connecting with their school and teachers on a daily basis.”

STEVE TATUM, TECHNOLOGY DIRECTOR, MCPS
Procurement Pilots and Toolkit

Chicago Connected Case Study
Chicago Connected is a first-of-its-kind partnership program that provides free high-speed Internet service to approximately 100,000 students and 60,000 households. The $50 million program is one of the most extensive and long-term efforts by any city to provide free, high-speed Internet to increase students’ connectivity so that they can continue learning remotely during COVID-19. Central to the project’s success was a visionary partnership with local ISPs to quickly determine which students currently don’t have broadband connectivity. A detailed case study for the Chicago Connected project was a heavily circulated resource to every school district, city, and state partner that we worked with as part of Digital Bridge K-12 and was the foundation for the principles of what became the K-12 Bridge to Broadband initiative.

Toolkit (RFP and NDA Templates)
We created self-service tools and customizable templates for school districts to procure Internet solutions to connect their students at home, including: an RFP “Residential Template” for use when seeking fixed residential broadband services, like a cable or DSL service; an RFP “Mobile Template” for use when seeking mobile broadband services, like personal hotspots; and a “Mutual NDA” template for use during the RFP process when sharing confidential information.

Partnership for Los Angeles Schools (PLAS) Pilot
The Partnership for Los Angeles Schools (PLAS) is one of the largest, in-district transformation organizations in the United States, managing 19 of the highest-need schools in the Los Angeles Unified School District (LAUSD), and representing about 14,200 students. We supported PLAS to run the K-12 Bridge to Broadband program, which entailed issuing an RFP to partner with local ISPs – including Spectrum, AT&T, and Starry – to identify students without broadband and purchase service for low-income families.

New York City Pilot
We have partnered with the City of New York, the NYC Department of Youth and Community Development, and the Department of Emergency Management to implement a hybrid model to support remote learning for NYC students. We are working with them to facilitate a donation of Cisco equipment and manage the process to improve broadband connectivity at 20 community centers across all five boroughs, impacting thousands of students. With sufficient connectivity at these locations, the goal is to relieve some of the burdens placed on families on days when their students are not scheduled to be in the classroom.

Mapping Tool/Provider Lookup Tool Enhancements and State Use Cases
Building on our experiences with pilot school districts during Phase 1 of the project, we continued to develop our software tools during Phase 2. We added functionality to our mapping tool that allowed users to more easily upload address data and made LTE coverage data from wireless Internet service providers available. We also began building out functionality for state education agencies that allowed the mapping tool to integrate with state data warehouses. During our pilot program, we worked with over 175 individual users that were validated for security purposes. The tool processed over 85,000 unique postal addresses.

BCG/Common Sense Report
In early summer, Common Sense Media and Boston Consulting Group released a report entitled “Closing the K-12 Digital Divide in the Age of Distance Learning” that estimated between 15 and 16 million K-12 students lacked sufficient Internet access or learning devices at home to participate in remote learning. EducationSuperHighway joined Common Sense and BCG on a follow-up report entitled “Connect All Students: How States and School Districts Can Close the Digital Divide” that focused on developing a framework for closing the K-12 home digital divide based on learnings from the actions states and school districts had taken during the pandemic. The framework provided in the report centers around three key focus areas: assessment of students without connectivity or a device at home, effective procurement of solutions, and how to fund these efforts.
Phase 2: Results and Key Takeaways

K-12 Bridge to Broadband

ISPs are now launching programs that enable school districts to identify students without broadband and purchase service for low-income families. We have partnered with national providers associations and their membership providers on K-12 Bridge to Broadband to develop a framework of five core principles for working with school districts or states to:

1. Confidentially share information to identify students without broadband at home
2. Enable the school districts to purchase Internet service for families through sponsored service agreements.

Over 80 ISPs have signed on to the initiative – covering over 80% of the U.S. population – from the following national provider associations: The Internet & Television Association (Cable Association - NCTA), U.S. Telecom Association (USTA), The Rural Broadband Association (NTCA), and the Rural Cable Association (ACA Connects). We are now partnering with states and districts to begin implementing the K-12 Bridge to Broadband program.

**CORE PRINCIPLES FOR ISPS WORKING WITH SCHOOL DISTRICTS AND STATES**

- Create a sponsored service offering for school districts to purchase Internet services for students at home.
- Provide the data school districts need to identify students who lack at-home broadband (i.e., provide addresses of students who are unserved and who could be provided with broadband service within 10 days).
- Agree to a baseline set of eligibility standards.
- Minimize the amount of information required to sign up to facilitate enrollment for families in need.
- Commit to protecting participating families’ privacy by not using the supplied information for target marketing.
Phase 2: Key Takeaways

During our Phase 2 efforts, **we validated the three key elements that are necessary to connect students for remote learning**: assessment, procurement, and funding. While we believe that the best long-term solution is a dedicated connection at home for every child, to get students connected quickly during this crisis, short-term solutions need to be flexible and creative, like the learning lab approach in NYC. Moving forward, states will be key actors in bridging the K-12 home digital divide by driving assessment through coordinated campaigns and SIS implementations and creating equitable, scalable solutions at the state level.

In addition to increased state leadership, there’s an opportunity to engage with Internet service providers in a new way to close the K-12 home digital divide. Collaborations between the public and private sectors modeled after the Chicago Connected project present a new opportunity to systematically identify students who are on the wrong side of the K-12 digital divide and deliver solutions at scale.

**National Progress on Closing the K-12 Home Digital Divide**

Over the past six months, we have seen that with the right focus the K-12 home digital divide is a solvable problem. At least 36 states have allocated over $1.5 billion in federal CARES Act funding specifically to address K-12 technology. Internet service providers have created new offerings to meet the needs of unconnected students, and school districts have worked diligently to identify students lacking access and match them with solutions. Based on estimates from the Internet service provider industry, **three million students who lacked home Internet at the onset of the pandemic have been connected** as a result of these efforts. However, for these gains to be sustained and built upon so that the K-12 home digital divide can be closed permanently, there must be long-term funding from the federal government.

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3. See CARES Funding for K-12 Connectivity tracker.
4. Estimate based on analysis by CTIA and NCTA.
Where We Go from Here

The spring and fall of 2020 have been the most challenging time for K-12 students and educators in generations. For students without reliable access to home Internet and devices, it has been nearly impossible to keep up with their better connected classmates. The good news is: for the first time, there is a real opportunity to close the homework gap permanently.

FOR THIS TO HAPPEN, THERE ARE THREE REQUIREMENTS:

1. School districts and states need a repeatable way to identify students who need access and to track progress (either through district-led outreach and tracking or service provider data exchanges),
2. Internet service providers need to offer affordable solutions for home access that are tailored to schools, and
3. There needs to be federal funding for student home access.

The pandemic has created an unprecedented opportunity to close the homework gap and potentially the digital divide at large. For the first time, we have a mechanism (K-12 Bridge to Broadband) that can provide the data that is needed to develop and execute thoughtful, cost-effective strategies for closing the homework gap and potentially the political will to fund this critical need.

As a result, EducationSuperHighway is delaying our planned sunset to ensure a successful implementation of K-12 Bridge to Broadband and execute a federal advocacy strategy to secure the necessary funding.

Our goal over the next five months is to demonstrate that data exchanges between Internet service providers and schools, like the example we saw in Chicago, can be used to efficiently identify which students are on the wrong side of the digital divide and what solutions are available to them. We will do this by implementing K-12 Bridge to Broadband data exchanges in three to five states and large school districts, ensuring that all of the major Internet service providers have successfully participated in at least one data exchange. We believe that this will establish K-12 Bridge to Broadband as an ongoing tool that states and districts can use to identify which students are not connected and track progress toward closing the homework gap.

On the advocacy front, we have prepared a proposal for the next administration on how to close both the homework gap and the digital divide at large. As you can imagine, our proposal is based on the strategy we used to close the digital divide in America’s K-12 schools and leans heavily on the same public-private partnership between schools, states, and Internet service providers that was so effective in connecting classrooms. It also relies on a funding model similar to the E-rate program’s combination of grants for construction and subsidies to school districts and cities for ongoing costs. We will begin the work of building a coalition to support our proposal in the coming weeks and look forward to partnering with many of you on this mission.

In order to focus on this work, we will be transitioning the rest of Digital Bridge K-12 to CCSSO who will take the lead on scaling the solutions we have developed together over the last six months through states and tracking national and state level progress towards closing the K-12 digital divide. We are excited to be deepening our partnership with CCSSO on both Digital Bridge K-12 and the K-12 Bridge to Broadband and advocacy work that EducationSuperHighway will now focus on.

We are grateful to have been given the opportunity to make a difference for America’s K-12 students during the pandemic. This work has energized our team and has opened new opportunities for us to scale our impact. This is truly a historic opportunity for advancing equal access to opportunity in the United States, and we look forward to continuing to be a catalyst for delivering on the change that is now possible.
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Partners

COVID-19 Education Coalition (*Connectivity Working Group*)

- Co-Lead: Nan Williams, Arizona Technology in Education Association
- Co-Lead: Karen Richardson, Virginia Society for Technology in Education
- Keith Krueger, CoSN - Consortium for School Networking
- Kyle Malone, Grantmakers for Education
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Digital Equity Outreach Month Partners

- AASA
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- ISTE

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- Common Sense
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- Strive Together
- Alliance for Excellent Education
- KSMC
- Edmoxie (Jeff Mao)
- USC EDGE Center
- human-I-T
- Kids First Chicago

States

- Wisconsin
- Indiana
- Virginia
- Nebraska

Service Provider Associations

- NCTA
- NTCA
- US Telecom
- ACA Connects
About EducationSuperHighway

EducationSuperHighway was founded in 2012 with the mission of upgrading the Internet access in every public school classroom in America. The organization took on this mission because it believes that digital learning has the potential to provide all students with equal access to educational opportunity and that every school requires high-speed broadband to make that opportunity a reality. Having completed our mission to upgrade schools, we pivoted our work to focus on connecting the 10-15 million students who lack home broadband. In the second half of 2020, we launched K-12 Bridge to Broadband to accomplish this in partnership with states, districts, and ISPs at scale.